Government of Mysore, Stores Purchase Committee, Bangalore.

No. S. P. C. 8245-54, dated 28th November 1930.

To

The firms dealing in Laboratory Appliances.

Gentlemen,

Chemicals and Apparatus required to the Public Health Institute, Bangalore. This office enquiry No. 7413-20, dated 18th November 1930.

Please substitute the enclosed lists to those sent along with this office enquiry No. 7413-20, dated 18th November 1930 and send your quotation so as to reach this office on or before the 10th December 1930, as already requested.

APPARATUS.

Item No.	Particulars	Quantity
1	Evaporating basins, Berlin, Porcelain, 185 mm. diameter	5
2	Do 300 mm. do	2
3	Beakers Griffin form, Pyrex 600 cc.	25
4	Do 1,000 cc.	10
5	Do 2,000 cc.	5
6	Fractional distillation flasks Pyrex 500 cc.	10
7	Do do 1,000 cc.	5
8	Flasks, F. B. Pyrex. 6 litres	3
9	Do 12 do	2
10	Pipettes, subgraduated 1 x 1/10 100 cc.	50
11	Do 2 x 1 50 cc.	10
12	Do volumetric. 10 cc.	10
13	Do do 5 cc.	10
14	Kipp's apparatus, all joints ground to fit 1,000 ml.	1
15	Tyco's oscillator, self recording sphygmomanometer	1
16	Hydrogention potentiometer, Hellege's complete	1
17	Thermometer, Jena normal glass 60° x 1/10 cc.	6
18	Do do 200°C x 1/1	3
19	Do do 110°C x 1/1	6
20	Leibeg's condenser 50 cm. long	12
21	Litmus paper books, red and blue	2 doz.
22	Filter paper fat free, 32 cm. dia.	2,000
23	Bluemontal shaker for Khan test	1
24	Wassermann tubes with rods	5,000
25	Test tubes 8" x 3/4"	1,000
26	Do 10" x 1/2"	1,000
27	Durham's fermentation tubes	1,000
28	Cotton white ungreased	15 kg.
29	Cotton coloured for plugging, 5 Diff. Colors	10 kg.
30	Pencils to write on glass, Yellow	3 doz.
31	Copper foil electrolytic, 1 mm. thick	1 kg.
32	Original record syringes, 2 cc.	5
33	Do 5 cc.	5
34	Do 10 cc.	5
35	Do 20 cc.	1
36	Platinum iridum needle for 2 cc.	2
37	Do 10 cc.	2
38	Record syringes 1 x 1/100 cc.	2
39	Test tube racks metal, Khan	3
40	Antigen suspension vials, Khan	1,000
41	Weston portable scale milliammeter No. 264 range milliamperes 100-0-100 for alternating current.	1
42	Tungar rectifier	1
43	Precision distilling apparatus, Type "E" electrically heated for use with 220 volts, alternating current, 60 cycles, capacity of out-put per hour 1½ gallon.	1
44	Automatic cut off switch for above	1
45	Precision distilled water storage tank for use with the precision stills, holding capacity 10 gallons.	1
46	Sterilizing boxes for pippettes, nickel plated and asbestos lined inside, 500 x 100 x 80 mm.	1
47	Do do 350 mm. long, 50 mm. diameter.	8 oz.
48	Nickel-Chrome wire S. W. G. No. 20	

CHEMICALS.

49	Acetic acid glacial, G. R.	1 kg.
50	Chloroform G. R.	3 "
51	Xylol Ph. g. vi.	3 "
52	Sodium Bisulphite, G. R.	1 "
53	Do Chloride G. R.	10 "
54	Fuchsin acid, Grubler's	100 gr.
55	Sodium Potassium tartarate, G. R	10 kg.
56	Copper sulphate, Ph.g.Vi.	10 "
57	Saccharose, G. R.	1 "
58	Glucose G. R.	2 "
59	Lactose G. R.	1 "
60	Maltose G. R.	1 "
61	Mannite, G. R.	1 "
62	Agar, Agar, White powder	1 "
63	Peptone Witte's	2 "
64	Liquor Ammonia, Caustic G. R.	5 "

Item No.	Particulars	Quantity
65	Sodium Carbonate G. R. ..	10 kg.
66	Do Bicarbonate ..	10 ,,
67	Alcoholabsolute ..	10 ,,
68	Coccaine Hydrochlor ..	10 gr.
69	Mercury bidistilled ..	1½ kg.
70	Beta napthol ..	250 gr.
71	Aniline A. R. ..	1 kg.
72	Sodium Nitroprusside, G. R. ..	250 gr.
73	Potassium Biohromate G. R. ..	1 kg.
74	Sodium Tungastate ..	1 ,,
75	Pottassium bromide, G. R. ..	1 ,,
76	Do Iodide G. R ..	1 ,,
77	Ammonium chloride G. R. ..	1 ,,
78	Trichloracitic acid, Phosphorous free ..	1 ,,
79	Cedar wood oil ..	500 cc.
80	Sodium taraucholate ..	1 kg.
81	Glycholate ..	1 ,,
82	Azolitmon ..	10 gr.
83	Phosphoric Acid. A. R. Glacial ..	1 kg.
84	Ammonium Molybdate ..	500 gr.
85	Starch soluble ..	1 kg.
86	Methylen blue, Grubler's ..	50 gr.
87	Leishman's Stain, Grubler's ..	50 ,,
88	Gentian violet, do ..	50 ,,
89	Jenner's stain, do ..	10 ,,
90	Goimsa Solution ..	10 ,,
91	Azure (ii) Eosin ..	10 ,,
92	Do (ii) ..	10 ,,
93	Brilian green ..	50 ,,
94	Melachite green ..	20 ,,
95	Methyl green ..	20 ,,
96	Methyl violet B ..	10 ,,
97	Do 6 B ..	10 ,,
98	Thionin Ehrlich ..	20 ,,
99	Tannic Acid G. R. ..	1 kg.
100	Acis osmic in ½ Gram tubes ..	5 gr.
101	Pyroglol, G. R. Resublimed ..	1 kg.
102	Silver nitrate, G. R. ..	1 ,,
103	Methyl alcohol, acetone free ..	2 ,,
104	Galactose, G. R. ..	50 gr.
105	Dulcit	10 ,,
106	Levulose ..	50 ,,
107	Salicin, G. R. ..	10 ,,
108	Mercuric Chloride, G. R. ..	500 gr.
109	Caustic Potash, G. R. ..	1 kg.
110	Potassium Permanganate, G. R. ..	1 ,,
111	Castile Soap ..	2 ,,
112	Diphenylamine ..	250 gr.
113	Potassium Nitrate, G. R. ..	2 kg.

No. 7283-7302, *dated* 15—27*th November* 1930.

To

The Firms dealing in Machinery.

Gentlemen,

LATHES.

Please be good enough to let us have your best prices and terms of delivery for the lathes described in the attached specifications, so as to reach the undersigned by the 20*th of December* 1930.

2. The prices to be quoted should be for free delivery, f.o.r. Maddur, Mysore Railways, and full details and illustrations of the lathes offered should be sent along with the quotations.

SPECIFICATION FOR THE MOTOR DRIVEN FACING AND BORING LATHE.

The lathe should be motor driven with change speed levers. The motor should be suitable for 110 volts D.C. and should be provided with a starter and speed controller, so that a revolution of 2 or 3 R. P. M. could be obtained when handling works of very large diameter.

2. The head stock and headstock shaft should be of sound construction sufficiently strong for holding large turbine covers weighing up to one ton. The present equipment required is only a plain face plate about 8 feet in diameter to hold work up to 84" diameter. This should be suitable for fixing a chuck later on.

3. It is expected that the mounting of the head stock shown in the sketch will admit of the lathe, handling work up to 84" diameter without any gap in the bed. This requirement is necessary so that the central rest bed could be extended later on when necessary. For the present, it is sufficient if a length of centre rest bed is supplied so that the distance between the centres is 4 feet. The bed to be supplied now should, however, be suitable for fixing extensions later on.

4. The tool rest must be provided with a boring attachment driven by an independent 110 volt D.C. motor complete with its own starter and speed controller. The tool attachment and motor should be suitable for drilling holes in the side covers of the turbines upto 3" diameter.

5. The surfacing and boring tool must be able to serve the full diameter of the work upto 84" radially for the distance between centres, that is, 4 feet. When the centre rest bed is extended, the extension should be provided with faced flanges and extra tool rest guides so that the tool may be able to serve for the full distance between centres when extended.

Note.—This lathe is intended for installation on the floor of the turbine room where it is required for very accurate work in connection with the surfacing and drilling of hydraulic reaction turbine side covers and also for surfacing journals and shafts. The lathe and accessories must be suitable in every respect for the heavy weights that are to be handled and for doing accurate work. The machine should be suitable for installation on the floor of the turbine room without making any pits and all the movements required for working the lathe should be arranged to be obtained by independent motors and gearing, so that no overhead shaft and pulleys will be necessary. The machine is intended for trueing the facings of side covers up to 84" diameter and for handling shafts later on up to 10 feet in length. The machine to be supplied should be suitable in all respects for the combined duty required of it as it is the intention to make the machine serve the purpose of a lathe and a drilling machine as far as the work in the turbine room is concerned. It is desirable that the machine should be of the horizontal axis type so that large and heavy shafts could be handled later on. All the parts of the machine must be made of first class material with ample factor of safety and every way in accordance with up-to-date practice in machine tool construction.

No. S. P. C., dated 15th November 1930.

SPECIFICATIONS FOR 20" GAP ENGINE LATHE FOR SLIDING, SURFACING AND SCREW CUTTING.

The principal dimensions of the Lathe must be as follows:—

(1)	Swing over ways	20"
(2)	Swing through Gap	44"
(3)	Length of Bed	14 ft.
(4)	Gap opening	22"
(5)	Distance between centres with gap fully opened...	Not less than 10 feet

2. Bed should be of strong box section similar to the design shown in the drawing with supporting standards, providing receptacles for tools, change gears, etc., and should be amply strong for providing stability and strength when cutting with high speed steels.

3. The driving Cone should have 5 shifts each with about 3" face. The live spindle should be of forged steel and should have a hole of 2½" dia. throughout. Head-stock gears must be powerful and should be suitably covered with guards.

4. The carriage should be fitted with compound rest with graduated swivel and Micrometer screw adjustments. The tail stock should have large spindle, broad base and set-over device. Taper cutting attachment should also be included to admit of cutting tapers up to 4" in one foot. The diametrical swing over compound rest should not be less than 13".

5. Screw works should be independent of speed motions and the lead screw must be of special steel designed for the heavy and continuous duty. The range of screw cutting should be from one thread in 6" to 16 per inch including 11½ pipe thread.

6. All abrasive surfaces should be seated properly by hand scraping and all motive parts including rack, subject to wear or strain should be made of steel or Phosphor Bronze. The feed table, should be universal and designed to respond quickly to the Operator, its action for cross and latteral feeds being smooth and even. Automatic cross and latteral feeds should be reversible in feed aprons. The lathe should be furnished complete with counter-shaft, small face plate, open adjustable three-jawed back rest with lever handle, lock-nut and a complete set of wrenches.

7. Extra prices must be given for a 42" diameter special face plate and also a 42" diameter universal Chuck with four reversible jaws, and also a ball turning attachment to the compound rest.

8. The lathe is required for installation in a Workshop for handling heavy water Turbine Electric Generators repair work and should be suitable for overhead drive from line shafting. Drawings and complete specifications must be furnished showing the overall dimensions of the Lathe and its principal features of design and construction.

No. S. P. C. 8023-31, *dated* 24—26*th November* 1930.

To

THE FIRMS DEALING IN SCIENTIFIC INSTRUMENTS

Gentlemen,

Microscopes.

Please be good enough to intimate your best prices and the earliest time of delivery for the materials described in the attached schedule.

2. The prices to be quoted should be for delivery f.o.r. Bangalore and Mysore and should reach the undersigned on or before the 8th December 1930.

3. The description given in the schedule is only to indicate our requirements. Suitable alternatives may also be quoted for our consideration.

Specification for Microscopes.

(1) One Leitz Medium Sized Microscope for class work stand G. T. 20/92 with the following equipment for Diagnostic work :—
- (1) Revolving nose piece for 3 objectives.
- (2) Achromatic objectives 3, 6L.
- (3) Achromatic Oil immersion objective 1/12 of num. ap. 1·30.
- (4) Huyghens eyepieces 5 x, 8 x, 12 x.
- (5) Magnifications 50-1200.

(2) One Bauch and Lomb Microscope F. F. S. 10 with builtin Mechanical stage with the following equipment :—
- (1) With triple circular nose pieces.
- (2) Achromatic Objectives 10 (16 mm.) 43 (4 mm.) Dry and 100 (1·8 m.m. / 1·30) Oil immersion.
- (3) Eye pieces 5, 10.
- (4) Abbe Condenser. 1·20.

(3) Three Leitz Microscopes F. T. 25/92 Stand with Optical equipment :—
- (*a*) With the same equipment as for No. 1.
- (*b*) Ehrlich's eye piece 1.
- (*c*) Ehrlich's Comparison piece 1.
- (*d*) Pointer eye piece 1.
- (*e*) Double demonstration eye piece X8 — 1.

(4)

P. S :—
- (*a*) One Microscope Zeiss E. S. G. Stand 115 with triple nose piece complete.
- (*b*) Microscope slides glass 50 gross.
- (*c*) Cover glasses. 1 lb.

No. S. P. C. 8161-8215, *dated* 28*th November* 1930.

To

The firms dealing in hardware.

Gentlemen,

Hardware materials for remodelling Mysore Transmission Line.

Please be good enough to intimate your best prices and terms of delivery for the following so as to reach the undersigned on or before the 25*th December* 1930 :—

1.	Angle iron, 4" x 2" for cross-arms, in cut lengths of 24 feet, without bends, etc., and will be paid for on the actual weight	No.	1,016
2.	Angle iron for braces, 3" x 3" x 3/8" size, in exact lengths of 16 feet, without bends, etc., and will be paid for on the actual weight	"	508
3.	Angle iron for holding ground wire, 4" x 4" x 3/8" size, in 15 feet lengths without bends, etc., and will be paid for on the actual weight	"	10
4.	Strap iron, 4" x 3/8" size, for clamps, in 18 feet lengths, free from bends	"	64
5.	Strap iron, 2" x 5/16" size, for clamps, in 18 feet lengths, free from bends	Lengths	127
6.	Bolts 5/8" dia., 10" long, Hexagonal head, with 2 nuts, of good workmanship, with fine threads and deep Vs.	Nos.	800
7.	Do with 1 nut do ...	"	4,700
8.	Do with 1 nut and 2 washers of ¼" thick do	"	800

9.	Galvanized iron pipe 1" dia., in standard lengths, with both ends screwed and each length with a coupling.	R.ft.	2,032
10.	Plain Galvanized iron sheet, 24 B. W. G., for Bird guards, 8' x 4' size	Sheets.	190
11.	Mild Steel round iron for 'J' bolts, 3/8" dia., in standard lengths	R.ft.	1,524
12.	Plain Galvanized iron sheeting, 24 B. W. G. for pole tops in 6' x 3' sheets	Nos.	64
13.	Strap iron 1" x 1/8" in 18 feet lengths	,,	56
14.	Galvanized iron bolts ½" x ¼" with nuts, of good workmanship	,,	3,100
15.	Round head wood screws, 1½" size	,,	3,100

The prices to be quoted should be for delivery f.o.r. Mysore and f.o.r. Maddur, Mysore Railways. As the materials are required urgently, whether the supplies could be made immediately the order is placed should be indicated.

The quotations should be accompanied by samples of bolts and nuts offered, with slips indicating ownership of the samples securely attached thereto.

Where the prices quoted are by weight, the weight of the material per foot should be specified.

The materials to be offered should conform to British Standard Specifications and the make of the material quoted for should be clearly specified in each case, as also whether the material offered is tested or untested. Tenders not giving these particulars will not be considered.

It should be understood that failure to supply the materials within the stipulated time or in accordance with the specifications will entail cancellation of the order and purchases being made from other sources debiting you with the extra cost if any incurred on such purchases; in addition to the levy of 3 per cent of the value of the order as and by way of liquidated damages.

No. S. P. C. 8300-8315, *dated 29th November* 1930.

To

The Firms dealing in Turpentine.

Gentlemen,

Oil Turpentine required for Mysore Railways.

Please be good enough to intimate your best price and the earliest time of delivery for the material described below:—

150 gallons of Oil Turpentine, pure water white (Swedish make only required).

The prices to be quoted should be for delivery f.o.r. Mysore and should reach the undersigned on or before the 10th December 1930.

Sample of the material to show the quality offered should also accompany your quotation. The supply is required to be made periodically on indents from the Chief Store Keeper, Mysore Railways.

No. S. P. C. 8316-35, *dated 29th November* 1930.

To

The firms dealing in Train Lighting Materials.

Gentlemen,

Electric Bulbs for Train Lighting purposes.

Please be good enough to intimate your best prices and the earliest time of delivery for the materials described below:—

Ten Gross Bulbs, electric—"Osram" or equally good make, pearl white train lighting, 24 volts, 15 watts, M. F. Gas filled sand blasted with the words "Mysore Railways, 1930-31."

The prices to be quoted should be for delivery f.o.r. Mysore based on Railway Material Certificate rates and should reach the undersigned on or before the 15th December 1930.

No. S. P. C., dated 27th November 1930.

To

The Firms dealing in Tools and Plant.

Gentlemen,

Local Maintenance Materials for Electrical Department,

Tools and Plant.

Please be good enough to intimate your best prices and the earliest time of delivery for the materials described in the attached schedule.

The prices to be quoted should be for delivery f.o.r. Bangalore and should reach the undersigned on or before the 10th December 1930.

Tools and Plant.

Item No.	Description of the materials	Quantity
1	Pipe wrenches ½" to 1½"	Nos. 3
2	Do 1½" to 3"	,, 3
3	Tape copper 1" x ⅛"	Feet 200
4	Carpenter plane, fish brand, 1¾" ..	Nos. 9
5	Bits twist drill, round taper shank 3/16"	,, 6
6	Do 3/8"	,, 3
7	Do 5/16"	,, 9
8	Do 9/16"	,, 3
9	Do 1/16"	,, 3
10	Do ⅝"	,, 6
11	Do 11/16"	,, 6
12	Do 7/32"	,, 3
13	Do 9/32"	,, 3
14	Do 11/32"	,, 3
15	Do 1"	,, 3
16	Do 1 1/16"	,, 3
17	Do 1 3/16"	,, 3
18	Do 1¼"	,, 3
19	Do 1⅜"	,, 3
20	Do 1 5/16"	,, 3
21	Do ½"	,, 3
22	Do ⅝"	,, 6
23	Do 13/32"	,, 3
24	Do 15/32"	,, 3
25	Do 19/32"	,, 3
26	Do 21/32"	,, 3
27	Do ¾"	,, 3
28	Bits twist drill, square taper shank 7/16"	,, 3
29	Do 9/16"	,, 3
30	Do 11/16"	,, 3
31	Do 13/16"	,, 3
32	Hacksaw frame adjustable, English ..	,, 3
33	Hammer ¾ lbs. ball pane ..	,, 3
34	Do 1¼ do ..	,, 3
35	Do 3 do ..	,, 3
36	Screw driver 4" champion ..	,, 15
37	Do 6" do ..	,, 21
38	Do 8" do ..	,, 24
39	Do 8" do ..	,, 3
40	Do 12" do ..	,, 6
41	Oil cans copper ½ pint capacity ..	,, 6
42	Do ¼ do ..	,, 3
43	Taps whitworth's 24 threads 3/16" (Set of each).	Sets 3
44	Monkey wrenches 6" Coe's knife handle	Nos. 24
45	Do 8" do	,, 30
46	Do 9" do	,, 12
47	Do 10" do	,, 18
48	Do 14" do	,, 9
49	Rapid automatic spanners consisting of 3 spanners 5½"—7½" and 11" long, 3 sets of each.	Sets 3
50	Lucas girder spanners 6" ..	Nos. 12
51	Do 9" ..	,, 4
52	Open end spanners ½" x 5/8" ..	,, 12
53	Spanners 5/8" to ⅝" ..	,, 12
54	Spanners ½" to 9/10" ..	,, 12
55	Box spanners ⅜" to ¾" ..	Nos. 4
56	Spanners double ended 3/8" to ½" ..	,, 12
57	Bench vice 6" jaw, identical with figure 4 on page 249 of Messrs. Richardson & Cruddas Cat. of 1916 edition.	,, 1
58	Do 5" jaw do ..	,, 1
59	Do 4" jaw do ..	,, 1
60	Chain wrench for 2" pipe ..	Nos. 3
61	Gas pliers, Bernard's, 7" size ..	,, 12
62	Anvil	,, 1
63	Crow bars 7' x 1¼" made of best quality hard steel, Edgar Allen's, octagonal	Nos. 6
64	Do 12' x 1½" do ..	,, 12
65	Rope Manilla ½" dia. best quality, of Messrs. Hongkong Rope Manufacturing Co., in coils of 720 feet each.	Coils 8
66	Do 5/8" dia. do ..	,, 7
67	Do ¾" ,, do ..	,, 16
68	Do 1" ,, do ..	,, 8
69	Do 1½" ,, do ..	,, 2
70	Augers, Sheffield make, 9/16" ..	Nos. 60
71	Do ¼" ..	,, 6
72	Do ⅜" ..	,, 9
73	Do ½" ..	,, 36
74	Do ⅝" ..	,, 6
75	Bolt cutter, length 30", to cut ½" bolts	,, 2
76	Laddles, iron, 4"	,, 4
77	Saw hand 36", Engins mark ..	,, 8
78	Bill hooks	,, 16
79	Bellows hand	,, 8
80	Stencil plates from 0 to 9 ..	Sets 12
81	Do A to Z ..	,, 6
82	Weighing scales having platform up to ½ ton.	Nos. 2
83	Chisel cold 1"	,, 3
84	Chisel carpenter ½", Fish mark ..	,, 3
85	Hatchet hand ..	,, 6
86	Emery wheel, Bull Dog Brand, 6" x 1" x ½" bore.	,, 2
87	Emery wheel, Bull Dog Brand, 10" x 1" x ½" bore.	,, 2
88	Jacks screw lifting ..	,, 2
89	Pulley blocks, double shieve, ½" iron ..	Pairs 6
90	Do 1" ,, ..	,, 10
91	Do ¾" ,, ..	,, 22
92	Do ½" ,, ..	,, 12
93	Snatch pulley block, single shieve, 5"–8"	,, 10
94	Pick axes, cast steel, 6 lbs. weight approx.	Nos. 4
95	Pans mortar 16" dia., 1/16", iron, heavy quality.	,, 18
96	Posts, iron, modium	,, 32
97	Pots soldering 8" dia. at the mouth ..	,, 3
98	Comealong, steel, for No. 6 B. S. wire (Samples required).	,, 12
99	Hydrometer with syringe ..	,, 6

N.B.—All tools mentioned in the list must be of the best genuine, English or American make and must bear the stamp of the manufacturer's name on them. Tools that do not have the stamp on them are liable to be returned to the suppliers at their cost.

Samples of Manilla Rope required against items 65—69 should accompany the quotation, as also sketches the tools offered wherever possible.

Yours faithfully,

M. S. RAMCHENDRA RAO,

Secretary,

Stores Purchase Committee.